

Application Serial No. 09/446,395

Atty. Docket No. 000515-175

REMARKS

Claims 1-19 are pending in the present application. Claims 1 and 8 were amended to recite an oxygen/carbon ratio equal to or higher than 0.23. Support for these amendments may be found at least on page 14 of the application. See *materials 2a-b and 3a-b, lines 5-26*. Claims 2-11 were amended to place the claims in better format for prosecution in the U.S. Patent and Trademark Office. The amendments are merely technical in nature and do not narrow the scope of any of the claims so amended. No new matter was added.

Claims 1-4 and 6-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gryskiewicz et al., U.S. Patent No. 5,913,851, in view of Langdon, U.S. Patent No. 5,368,910. Applicants respectfully traverse this rejection.

Claim 1 of the present application is directed to a liquid-permeable cover sheet for an absorbent article which cover sheet comprises at least a first material layer, wherein a surface of the first material layer essentially consists of polyethylene which has been treated with plasma or corona to obtain a hydrophilic surface. The surface of the first material layer further has an oxygen/carbon ratio which is equal to or higher than 0.23. Independent claim 8 is directed to an absorbent article comprising an absorbent body enclosed between a liquid-impermeable cover sheet and a liquid-permeable cover sheet. The liquid-permeable cover sheet comprises at least a first material layer wherein a surface of the first material layer essentially consists of polyethylene which has been treated with plasma or corona in order to obtain liquid permeability. The surface of the first material layer further has an oxygen/carbon ratio which is equal to or higher than 0.23.

The problem solved by the claimed invention is to be able to obtain a liquid-permeable cover sheet having a higher hydrophilicity of wettability. The present invention provides a cover sheet having good liquid permeability even after repeated wetting of the article. *Page 3, lines 32-35*. As regards corona-treated and plasma-treated materials, it has

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been found by Applicants that different materials show significant differences in the acquired ability to retain the liquid permeability upon repeated wetting. *Specification, page 4, lines 7-11*. In other words, it surprisingly has been found that the liquid permeability upon repeated wetting is substantially better for materials with a surface of polyethylene than for materials with a surface of polypropylene. *Specification, page 4, lines 11-16*.

In order to examine the chemical composition of the material surface and determine the proportion of oxygen-containing compounds on the material surface, which corresponds to higher hydrophilicity or wettability, ESCA was performed on certain materials as detailed in Example 1. The results showed that materials 2 and 3, the materials with a fibre covering of polyethylene, had the highest proportion of oxygen-containing compounds on the material surface. These materials retain a high oxygen/carbon ratio even after the structure has been washed, which is an indicator of higher hydrophilicity or wettability. *Page 14, lines 16-26*. The oxygen/carbon ratio for these materials is equal to or above 0.23. Thus, Applicants have discovered that a cover sheet or absorbent article as defined in the amended claims provides significant advantages over polypropylene materials or materials not treated as defined in the claims.

According to the Office Action, Gryskiewicz discloses the use of an absorbent article with an absorbent body, backsheet and topsheet, where the topsheet comprises a first material (54) that can be polyethylene or a bicomponent fiber with a polyethylene sleeve and polyester core. *Office Action, page 2*. This teaching is then combined with the teachings of Langdon regarding plasma/corona treatment to allege the obviousness of the invention as defined by the rejected claims. This combination is in error and requires impermissible hindsight reconstruction of the art.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or

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to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim limitations. *MPEP* § 2143. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The rejection at issue does not meet these requirements. First, there is no suggestion or motivation to select the material from Gryskiewicz as indicated in the Office Action. Only one section of Gryskiewicz is relied upon for the rejection, with complete disregard for the teachings of Gryskiewicz as a whole. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). The portion of Gryskiewicz relied upon describes a support layer 54. However, this reliance completely ignores the other teachings of the patent which describe other materials for top sheet or cover sheet-type materials. For example, in Figure 1, the illustrated undergarment 20 includes a substantially liquid impermeable moisture barrier 40 and a substantially liquid permeable bodyside liner 44, which are bonded together. Gryskiewicz teaches that suitable liners may comprise a nonwoven web or sheet of wet strength tissue paper, a spunbonded, meltblown or bonded-carded web composed of synthetic polymer filaments or fibers, such as polypropylene, polyethylene, polyesters or the like or a web of natural polymer filaments such as rayon or cotton. In a particular embodiment, the bodyside liner comprises a nonwoven, spunbond polypropylene fabric. *Column 7, lines 5-15*.

Gryskiewicz further describes a variety of embodiments wherein the bodyside liner may cover an absorbent material, including one wherein supplemental absorbent assemblies may be disposed between the bodyside liner 44 and the moisture barrier 40 (*column 14, lines 29-32*) or one wherein the containment beams may be disposed between the bodyside

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liner and the moisture barrier. *Column 16, lines 56-65, Figure 10.* All of these teachings are also directed to materials which may function as a cover sheet, but these materials are preferably *polypropylene*, not polyethylene. There is no reason given for why one of skill in the art would not choose the polypropylene preferred for bodyside liner 44 instead of the polyethylene preferred for the support layer 54 relied on by the examiner. Since Applicants' discovery involves the surprising advantage of polyethylene over polypropylene, the selection of one over the other must be clear from the art, not a matter of hindsight selection of one particular teaching over another without suggestion to do so. Moreover, the bodyside liner 44 appears more like a cover sheet structurally than support layer 54. *See Figures 1-4.*

Langdon is cited for its suggestion to use ionizing radiation for hydrophilizing fibrous surfaces. The combination of Gryskiewicz and Langdon fails, however, since Gryskiewicz does not provide the requisite motivation to combine the ionizing radiation teaching with polyethylene as claimed.

The rejection hinges entirely on the selection of only particular portions of Gryskiewicz to combine them with Langdon in an attempt to show the obviousness of the present invention. However, it is impermissible to use the claimed invention as an instruction manual or template to piece together the teachings of the prior art so that the claimed invention is rendered obvious. *In re Fritch*, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992). Moreover, the mere fact that reference can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 16 USPQ2d 1430 (Fed. Cir. 1990). There is no teaching or suggestion in Gryskiewicz or Langdon to use polyethylene treated as claimed to obtain a cover sheet with a particular oxygen/carbon ratio evidencing higher hydrophilicity as claimed.

The second requirement for *prima facie* obviousness is a reasonable expectation of success. Gryskiewicz describes treatment with a surfactant but suggests various materials for different portions of its absorbent structure. Langdon describes ionizing radiation to

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hydrophilize fibrous surfaces. Neither patent recognizes, nor would one of skill in the art from the teachings of either, alone or in combination, that a cover sheet as defined in the claims would result in a surprisingly advantageous cover sheet. Thus, one of skill in the art could not have had an expectation of obtaining the type of results described in the present specification from the descriptions of the cited patents.

The third requirement of *prima facie* obviousness is that the art teach or suggest all the claim limitations. Neither Gryskiewicz nor Langdon recognize the use of an oxygen/carbon ratio in obtaining an advantageously hydrophilic cover sheet. The examiner argues that the oxygen/carbon ratio would be inherent in the material of the prior art; however, this allegation of inherency cannot stand in view of the above showing that there is no motivation for the combination of Gryskiewicz and Langdon as asserted. The fact that a certain result or characteristic may occur or be present in the art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). The oxygen/carbon ratio of the claims cannot be inherent unless a material must have that characteristic. In view of the discussion above, neither cited patent teaches or suggests the claimed material; thus, no material disclosed or suggested may have the oxygen/carbon ratio of the claims.

In view of the foregoing, Applicants respectfully request that the rejection be withdrawn. A *prima facie* case has not been made in view of the lack of motivation to combine the cited patents as urged in the Office Action, and in view of the unexpected results obtained by the present invention as detailed in the specification and examples.

Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Gryskiewicz in view of Langdon and further in view of Thomas, U.S. Patent No. 4,351,784. Applicants respectfully traverse this rejection. In view of the above discussion regarding the lack of motivation to combine Langdon and Gryskiewicz as asserted in the Office Action,

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Thomas does not add anything to obviate the patentability of the claims. In view thereof, Applicants respectfully request that this rejection be withdrawn.

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed.

Respectfully submitted,

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**Attachment to Amendment dated June 13, 2003
Marked up Copy
Amended Claim(s) 1-11**

1. (Twice Amended) A liquid-permeable cover sheet [(1, 201, 301)] for an absorbent article, which cover sheet comprises at least a first material layer, wherein a surface of the first material layer [(2)] essentially consists of polyethylene which has been treated with plasma or corona to obtain a hydrophilic surface, and said surface of the first material layer has an oxygen/carbon ratio which is equal to or higher than [0.19] 0.23.

2. (Twice Amended) A liquid-permeable cover sheet according to claim 1, wherein the first material layer [(2)] consists of a nonwoven material comprising fibres having a surface, in which at least the surface of the fibres essentially consists of polyethylene.

3. (Twice Amended) A liquid-permeable cover sheet according to claim 2, [characterized in that] wherein the fibres are two-component fibres consisting of a core of polypropylene and a surrounding covering of polyethylene.

4. (Amended) A liquid-permeable cover sheet according to Claim 2, [characterized in that] wherein the fibres are two-component fibres consisting of a core of polyester and a surrounding covering of polyethylene.

5. (Amended) A liquid-permeable cover sheet according to claim 1, [characterized in that] wherein the first material layer [(2)] consists of a perforated plastic film.

6. (Three Times Amended) A liquid-permeable cover sheet according to claim 1 and further having a second material layer [(204)], wherein a surface of the second material layer [(204)] essentially consists of polypropylene.

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7. (Amended) A liquid-permeable cover sheet according to claim 6, [characterized in that] wherein the second material layer [(204)] is a nonwoven material which essentially is made up of polypropylene fibres.

8. (Twice Amended) Absorbent article comprising an absorbent body [(305)] enclosed between a liquid-impermeable cover sheet [(303)] and a liquid-permeable cover sheet [(301)], which liquid-permeable cover sheet [(301)] comprises at least a first material layer [(302)], wherein a surface of the first material layer [(302)] essentially consists of polyethylene which has been treated with plasma or corona in order to obtain liquid permeability, and said surface of the first material layer has an oxygen/carbon ratio which is equal to or higher than [0.19] 0.23.

9. (Twice Amended) Absorbent article according to claim 8, [characterized in that] wherein the liquid-permeable cover sheet comprises a second material layer [(304)] which has a material surface which essentially consists of polypropylene.

10. (Twice Amended) Absorbent article according to claim 9, [characterized in that] wherein the first material layer [(302)] is situated nearest the absorbent body [(305)] and in that the second material layer [(304)] is situated farthest from the absorbent body [(305)].

11. (Amended) Absorbent article according to Claim 9, [characterized in that] wherein the second material layer [(304)] is situated nearest the absorbent body [(305)] and in that the first material layer [(302)] is situated farthest from the absorbent body [(305)].